

CLAIM AMENDMENTS

Claim 1 (Currently Amended)

A toner for developing an electrostatic image comprising a resin and a colorant in which an arithmetic average of shape coefficient SF-1 of the toner particles calculated by Equation 1 is from 125 to 170 and a ratio of that to an arithmetic average of shape coefficient SF-2 of the toner particles calculated by Equation 2, SF-1/SF-2, is from 1.10 to 1.52 and the ratio of the toner particles having a circle corresponding diameter measured by a flow particle image analyzer of from not less than 0.60 to less than 1.00 μm is not more than 5.0% in number, and

the resin is a polymer comprising radical polymerized monomers and 0.1 to 15 weight% of the monomers based on the total weight of monomers, have a basic group or an acidic group,

Formula (1)

$$SF-1 = \frac{(\text{Maximum diameter of toner particle})^2}{(\text{Projection area of toner})} \times \frac{100\pi}{4}$$

Formula (2)

$$SF-2 = \frac{(\text{Circumference of toner particle})^2}{(\text{Projection area of toner})} \times \frac{100}{4\pi}$$

Claim 2 (Withdrawn)

A production method of a toner comprising a resin and a colorant wherein the method comprises a step of fusing resin particles in an aqueous medium, in which an arithmetic average of the shape coefficient SF-1 of the toner particles calculated by Equation 1 is from 125 to 170 and a ratio of that to an arithmetic average of the shape coefficient SF-2 of the toner particles calculated by Equation 2, SF-1/SF-2, is from 1.10 to 1.52 and the ratio of the toner particles having a circle corresponding diameter measured by a flow particle image analyzer of from not less than 0.60 to less than 1.00 μm is not more than 5.0% in number

Formula (1)

$$\text{SF-1} = \frac{(\text{Maximum diameter of toner particle})^2}{(\text{Projection area of toner})} \times \frac{100\pi}{4}$$

Formula (2)

$$\text{SF-2} = \frac{(\text{Circumference of toner particle})^2}{(\text{Projection area of toner})} \times \frac{100}{4\pi}$$

Claim 3 (Withdrawn)

An image forming method comprising developing an electrostatic latent image formed on a photoreceptor by facing the static latent image to a layer of a single-component developer formed on a developer conveying member so as to touch with together, in which the single-component developer comprises a toner comprising a resin and a colorant and an external additive, an arithmetic average of the shape coefficient SF-1 of the toner particles calculated by Equation 1 is from 125 to 170 and a ratio of that to an arithmetic average of the shape coefficient SF-2 of the toner particles calculated by Equation 2, SF-1/SF-2, is from 1.10 to 1.52 and the ratio of the toner particles having a circle corresponding diameter measured by a flow particle image analyzer of from not less than 0.60 to less than 1.00 μm is not more than 5.0% in number

Formula (1)

$$\text{SF-1} = \frac{(\text{Maximum diameter of toner particle})^3}{(\text{Projection area of toner})} \times \frac{100\pi}{4}$$

Formula (2)

$$\text{SF-2} = \frac{(\text{Circumference of toner particle})^2}{(\text{Projection area of toner})} \times \frac{100}{4\pi}$$

Claim 4 (Withdrawn)

An image forming method comprising a developing step of developing a static latent image formed on a photoreceptor by an static image developer comprising a toner comprising a resin and a colorant and an external additive, wherein the step of transferring the toner to an image receiving material, the step of removing the toner remained on the photoreceptor by a cleaning member and the step of recycling the toner removed from the photoreceptor to the developing step, in which an arithmetic average of the shape coefficient SF-1 of the toner particles calculated by Equation 1 is from 125 to 170 and a ratio of that to an arithmetic average of the shape coefficient SF-2 of the toner particles calculated by Equation 2, SF-1/SF-2, is from 1.10 to 1.52 and the ratio of the toner particles having a circle corresponding diameter measured by a flow particle image analyzer of from not less than 0.60 to less than 1.00 μm is not more than 5.0% in number

Formula (1)

$$\text{SF-1} = \frac{(\text{Maximum diameter of toner particle})^2}{(\text{Projection area of toner})} \times \frac{100\pi}{4}$$

Formula (2)

$$\text{SF-2} = \frac{(\text{Circumference of toner particle})^2}{(\text{Projection area of toner})} \times \frac{100}{4\pi}$$

Claim 5 (Withdrawn)

An image forming method comprising a step of developing an electrostatic image formed on a photoreceptor by double-component developer comprising a carrier and a toner comprising a resin and a colorant, in which an arithmetic average of the shape coefficient SF-1 of the toner particles calculated by Equation 1 is from 125 to 170 and a ratio of that to an arithmetic average of the shape coefficient SF-2 of the toner particles calculated by Equation 2, SF-1/SF-2, is from 1.10 to 1.52 and the ratio of the toner particles having a circle corresponding diameter measured by a flow particle image analyzer of from not less than 0.60 to less than 1.00 μm is not more than 5.0% in number

Formula (1)

$$\text{SF-1} = \frac{(\text{Maximum diameter of toner particle})^2}{(\text{Projection area of toner})} \times \frac{100\pi}{4}$$

Formula (2)

$$\text{SF-2} = \frac{(\text{Circumference of toner particle})^2}{(\text{Projection area of toner})} \times \frac{100}{4\pi}$$

Claim 6 (Previously Presented)

The toner of claim 1 wherein the content of the particles having the ratio SF-1/SF-2 of from 1.20 to 1.35, is not less than 60% in number.

Claim 7 (Previously Presented)

The toner of claim 1 wherein the value of SF-1 is from 130 to 165.

Claim 8 (Previously Presented)

The toner of claim 7 wherein the value of SF-1 is from 135 to 160.

Claim 9 (Previously Presented)

The toner of Claim 7, comprising a compound represented by following formula:



wherein n is an integer of 1 to 4; R₁ and R₂ each represent a hydrocarbon group which may have a substituent.

Claim 10 (Previously Presented)

The toner of claim 1, wherein ratio of toner particles having the ratio SF-1/SF-2 of from 1.1 to 1.52 is not less than 95% in number.

Claim 11 (Previously Presented)

The toner of claim 1, wherein ratio of toner particles having the ratio SF-1/SF-2 of from 1.20 to 1.35 is not less than 60% in number.

Claim 12 (New)

The toner of claim 1, wherein the radical polymerizable monomers are selected from the group consisting of aromatic vinyl monomers, acrylic acid ester based monomers, methacrylic acid ester based monomers, vinyl ester based monomers, vinyl ether based monomers, monoolefin based monomers, diolefin based monomers, and halogenated olefin monomers.

Claim 13 (New)

The toner of claim 1, wherein the radical polymerizable monomer having a basic group or an acidic group is a compound containing a carboxylic acid or sulfonic acid group, or an amine compound.

Claim 14 (New)

The toner of claim 1, wherein the monomers comprise a cross-linking agent.